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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,190	01/22/2004	Kun-tae Kim	Q78337	2320
23373	7590	10/20/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LIN, JASON K	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,190

Applicant(s)

KIM, KUN-TAE

Examiner

Jason K. Lin

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 05/27/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

The information disclosure statement (IDS) filed on 05/27/2005 is considered.

Specification

1. The disclosure is objected to because of the following informalities: Paragraph 0039 states "Although a digital-to-analog converter (DAC) is not shown in figure, the SD (480i) image signal input from the outside is converted into the SD (480i) image signal in digital format." The ADC block (201-32) shown in Fig. 1, suggests that the HD signal is of analog format and then converted to digital format to be processed by the MPEG Encoding Unit (201-35). Therefore, the SD input signal from outside would be an analog signal as well and would therefore require a analog-to-digital (ADC) instead of the DAC stated in the present specifications.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 2621

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 1- 7, 10-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. (US 7,110,043 B2) in view of Horlander (US 2005/0141714 A1).

Consider **claim 1**, Seo clearly teaches a set top box (Fig. 1) capable of performing wireless transmission (col 3: lines 63-66), the set top box (Fig. 1) comprising:

a digital television receiver (104), which converts a tuned digital broadcasting signal (col 2: lines 50-51) into a first transport stream (TS) (HD TS, Fig. 1; col 2: lines 50-54);

a wireless processing module (118, 120, 122, 124, 126), which processes one of the first TS (HD TS, Fig. 1, 118) and the second TS (SD TS, Fig. 1, 118) as a processed output (col 3: lines 11-20) and wirelessly transmits (transmitter, 128, col 1: lines 35-36) the processed output (col 3: lines 11-20).

Seo does not explicitly teach a TS converting unit, which receives at least one of a high definition (HD) image signal input from outside and an external SD image signal input from outside, converts the HD image signal into a standard definition (SD) image signal if the HD image signal is received, and then converts one of the SD image signal and the external SD image signal into a second TS.

In the same field of endeavor, Horlander teaches a TS converting unit (105), which receives at least one of a high definition (HD) image signal input

from outside and an external SD image signal input from outside ("the input signal data {HD, SD, ...}", paragraph 0022), converts the HD image signal into a standard definition (SD) image signal if the HD image signal is received ("desired format", paragraph 0022, "record a program in a particular format... such format may comprise, for example one of the HD, SD or analog signal formats." paragraph 0023), and then converts one of the SD image signal and the external SD image signal into a second TS ("desired format for recording", paragraph 0022).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to replace parts (106, 108, 110, 112, 114, and 116) disclosed in Seo et al. with the HD, SD input conversion to SD format functionality of the vcr disclosed in Horlander because it would allow a user to view a video whether its source is HD or SD. This would increase the functional ability of the system.

Consider **claim 2, as applied to claim 1 above**, Seo teaches a switching unit (PCI Bridge, 118) which receives the first TS (HD TS, Fig. 1, 118) and the second TS (SD TS, Fig. 1, 118) and outputs one of the first TS (HD TS, Fig. 1, 118) and the second TS (SD TS, Fig. 1, 118) as an output of the switching unit (col 3: lines 11-15).

Consider **claim 3, as applied to claim 2 above**, Seo suggests a decoding unit (MPEG-2 Decoder, 214) which decodes the output of the switching unit (PCI Bridge 118, 206) and outputs a decoded TS stream to an image device

connected to the set top box (col 3: lines 33-35, lines 50-52) by a wire, is possible.

Seo does not explicitly teach a wire connected between the set top box and an image device.

However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to take parts (206, 208, 210, 216, 214, and 218) disclosed in Seo and also connect the input of 206 with the output of 118, and have the resulting transport stream transmitted to the display via a wire (col 1: lines 26-27, col 3: lines 24-25) because the same information is outputted from the switching unit with only a different mode for transmitting the transport stream. Having both wireless and wired transmission of the transport stream would give the user backwards compatibility allowing them to use wire if desired.

Consider **claim 4, as applied to claim 1 above**, Horlander teaches the TS converting unit (105) comprises:

a converter (downsampling interpolator, MPEG decoding/encoding, paragraph 0022), which converts the HD image signal input from outside into the SD image signal ("converting HD video data to SD video data", paragraph 0022) and outputs the SD image signal as an output of the converter ("desired format for recording", paragraph 0022); and

an encoding unit (MPEG decoding/encoding, paragraph 0022), which converts the external SD image signal input from outside or the output of the converter into the second TS ("converts the input signal data {HD, SD, or

composite analog} to the desired format...", paragraph 0022, "such a particular format may comprise, for example one of HD, SD....", paragraph 0023).

Consider **claim 5, as applied to claim 4 above**, Horlander teaches the converter (downsampling interpolator, MPEG decoding/encoding, paragraph 0022) comprises:

an analog-to-digital converter (ADC), which converts the HD image signal input from outside into a digital signal ("analog to digital... and sampling functions to convert between digital HD and SD data...", paragraph 0022); and

a down converter (downsampling interpolator, paragraph 002), which converts the HD image signal converted into the digital signal into the SD image signal ("convert between digital HD and SD data...", paragraph 0022).

Consider **claim 6, as applied to claim 3 above**, Seo et al. teaches the wireless processing module (118, 120, 122, 124, 126, and 128) wirelessly transmits the processed output in a radio frequency range (col 1: lines 66-67, col 3: lines 18-20).

Consider **claim 7, as applied to claim 5 above**, Seo et al. teaches the wireless processing module (118, 120, 122, 124, 126, and 128) wirelessly transmits the processed output in a radio frequency range (col 1: lines 66-67, col 3: lines 18-20).

Consider **claim 10**, Seo et al. teaches a method for performing wireless transmission (col 3: lines 63-66) of television signals (col 2: lines 52-53) comprising:

receiving a digital broadcasting signal (col 2: lines 50-53) and converting the digital broadcasting signal (col 2: lines 50-53) into a first transport stream (TS) (HD TS, Fig. 1; col 2: lines 50-54);

transmitting one of the first TS and the second TS over a wireless medium (col 1: lines 35-36, col 3: lines 18-20).

Seo does not explicitly teach receiving at least one of an external high definition (HD) image signal and an external standard definition (SD) image signal, converting the external HD image signal into an internal SD image signal if the external HD image signal is received, and converting one of the internal SD image signal and the external SD image signal into a second TS.

In the same field of endeavor, Horlander teaches receiving at least one of an external high definition (HD) image signal and an external standard definition (SD) image signal ("the input signal data {HD, SD, ...}", paragraph 0022), converting the external HD image signal into an internal SD image signal if the external HD image signal is received ("desired format", paragraph 0022, "record a program in a particular format... such format may comprise, for example one of the HD, SD or analog signal formats." paragraph 0023), and converting one of the internal SD image signal and the external SD image signal into a second TS ("desired format for recording", paragraph 0022).

See motivation in **claim 1**.

Consider **claim 11, as applied to claim 10 above**, Seo suggest decoding (MPEG-2 Decoder, 214) one of the first TS and the second TS and transmitting a

decoded signal to an image device (col 3: lines 33-35, lines 50-52) through a wire, is possible.

Seo does not explicitly teach an invention that has a wire connected between the set top box and an image device.

However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to take parts (206, 208, 210, 216, 214, and 218) disclosed in Seo and also connect the input of 206 with the output of 118, and have the resulting transport stream transmitted to the display via a wire (col 1: lines 26-27, col 3: lines 24-25).

Transport streams that can be done wirelessly can also be done via wire (col 1: lines 26-27, col 3: lines 24-25). The same information is output from the switching unit with only a different mode for transmitting the transport stream. It would have been desirable to have backwards compatibility allowing for both selections of wireless or wire transmission of the transport stream.

Consider **claim 12, as applied to claim 10 above**, Horlander teaches converting one of the internal SD image signal and the external SD image signal into a second TS comprises encoding ("MPEG decoding/encoding", paragraph 0022) one of the external SD image signal and the internal SD image signal into the second TS ("desired format for recording", paragraph 0022).

Consider **claim 13, as applied to claim 12 above**, Horlander teaches converting the external HD image signal into an internal SD image signal ("converting HD video data to SD video data", paragraph 0022) comprises:

converting the external HD image signal into a digital signal ("converting HD video data to SD video data", paragraph 0022);

and down converting (downsampling interpolator, paragraph 002) the digital signal into the internal SD image signal ("convert between digital HD and SD data...", paragraph 0022).

Consider **claim 14, as applied to claim 11 above**, Seo teaches transmitting one of the first TS (HD TS, Fig. 1) and the second TS (SD TS, Fig. 1) over the wireless medium (col 1: lines 35-36, col 3: lines 18-20) is done at a radio frequency (col 1: lines 66-67, col 3: lines 18-20).

Consider **claim 15, as applied to claim 13 above**, Seo teaches transmitting one of the first TS (HD TS, Fig. 1) and the second TS (SD TS, Fig. 1) over the wireless medium (col 1: lines 35-36, col 3: lines 18-20) is done at a radio frequency (col 1: lines 66-67, col 3: lines 18-20).

5. **Claims 8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. (US 7,110,043 B2) in view of Horlander (US 2005/0141714 A1) as applied to **claims 3 and 5 respectively** above, and further in view of Tsukamoto et al. (US 2004/0045023).

Consider **claims 8 and 9**, Seo et al. and Horlander teach the claimed invention, but do not explicitly disclose the digital television receiver is an advanced television system committee (ATSC receiver).

In the same field of endeavor, Tsukamoto et al. teaches the digital television receiver (20, 4, and 7) is an advanced television system committee (ATSC receiver) (7).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to replace parts (102 and 104) disclosed in the modified device of Seo et al. with that of parts (20, 4, and 7) as taught in Tsukamoto because digital broadcasting can consist of both HD and SD signals, therefore it would have been desirable to have an ATSC receiver to demodulate both HD and SD signals instead of a channel decoder to just demodulate a HD signal. It would allow the user to view incoming video signals regardless of whether it is HD or SD, increasing the functional ability of the system.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawai et al. discloses a resolution detecting portion which checks to see if the video data is higher than a prescribed value and down converts the video data to SD format in US 2003/0152361. Choi et al. discloses multiple video source inputs going into a switch and decodes HD and SD video data to be displayed on a display unit in US 6,285,408.

Art Unit: 2621

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason K. Lin whose telephone number is (571)270-1446. The examiner can normally be reached on Mon-Fri, 7:30AM-5:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Lin
10/02/2006



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